03040202-07

(Lynches River)

General Description

Watershed 03040202-07 (formerly 03040202-120, 03040202-130) is located in Florence County and consists primarily of the ***Lynches River*** and its tributaries from Sparrow Swamp to its confluence with the Pee Dee River. The watershed occupies 146,773 acres of the Lower Coastal Plain region of South Carolina. Land use/land cover in the watershed includes: 36.0% agricultural land, 30.4% forested wetland (swamp), 24.9% forested land, 4.7% urban land, 3.2% scrub/shrub land, 0.4% water, and 0.4% nonforested wetland (marsh).

This segment of the Lynches River accepts drainage from its upstream reaches together with Mill Branch, Carter Creek (Big Branch), Bay Branch (Polecat Branch), McCall Branch (Taylor Branch), and Ward Mill Branch. Further downstream, Cypress Branch enters the river followed by Green Spring Branch (Cox Bay Branch, Horse Branch), Millpond Branch, High Hill Drainage Canal, and Big Swamp. Big Swamp Branch (Gum Branch) and Buck Branch join to form Big Swamp, near the Town of Pamplico, which accepts drainage from Cypress Branch and Little Swamp before draining into the Lynches River. Deep Creek and the Lake Swamp Watershed enter the river at the base of the watershed. The Lynches River County Park extends across the upper portion of the watershed. The portion of the river below the park to the Great Pee Dee River is a proposed scenic river corridor. There are a total of 241.5 stream miles and 128.3 acres of lake waters in this watershed. Big Swamp is classified FW* (dissolved oxygen not less than 4.0 mg/l and pH between 5.0 and 8.5) and the remaining streams in the watershed are classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-041	P/W	FW	LYNCHES RIVER AT US 52 NEAR EFFINGHAM
PD-281	P/INT	FW	LYNCHES RIVER AT S-21-49 5 MI NW OF JOHNSONVILLE
PD-168	S/W	FW*	BIG SWAMP AT S-21-360 1.1 MI W OF PAMPLICO
PD-631	BIO	FW	TRIBUTARY TO BIG SWAMP AT SR 164
PD-169	S/INT	FW*	BIG SWAMP AT US 378 & SC 51 0.9 MI W OF SALEM

Lynches River - There are two SCDHEC monitoring stations along this section of the Lynches River. This is a blackwater system, characterized by naturally low pH conditions. Although pH excursions occurred at both sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the upstream site ***(PD-041)***, aquatic life and recreational uses are fully supported. Significant decreasing trends in five-day biochemical oxygen demand, total phosphorus concentration, and total nitrogen concentration suggest improving conditions for these parameters. At the downstream site ***(PD-281)***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute criterion. Significant decreasing trends in five-day biochemical oxygen demand, turbidity, total phosphorus concentration, and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are fully supported at this site.

Big Swamp - There are two SCDHEC monitoring stations along Big Swamp. This is a blackwater system, characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred at both sites, they were typical of values seen in blackwater systems and were considered natural, not standards violations. At the upstream site ***(PD-168)***, aquatic life and recreational uses are fully supported, and a significant decreasing trend in fecal coliform bacteria suggests improving conditions for this parameter. At the downstream site ***(PD-169)***, aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity. There is a significant decreasing trend in pH. Significant decreasing trends in total nitrogen concentration and increasing trends in dissolved oxygen concentration suggest improving conditions for this parameter. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Big Swamp Tributary (PD-631) – Aquatic life uses are fully supported based on macroinvertebrate community data.

*A fish consumption advisory has been issued by the Department for mercury and includes the **Lynches River** within this watershed (see advisory p.43).*

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-010	GB	BLACK CREEK	PAMPLICO #1

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
LYNCHES RIVER CITY OF JOHNSONVILLE/EAST PLT PIPE #: 001 FLOW: 4.5	SC0025933 MAJOR DOMESTIC
LYNCHES RIVER MCCALL FARMS INC. PIPE #: 001, 01A FLOW: 0.288	SC0039284 MINOR INDUSTRIAL
LYNCHES RIVER CITY OF LAKE CITY/LAKE SWAMP WWTP PIPE #: 001 FLOW: 5.2 (MARCH-OCTOBER) PIPE #: 001 FLOW: 6.0 (NOVEMBER-FEBRUARY)	SC0046311 MAJOR DOMESTIC
LYNCHES RIVER RE GOODSON/RE GOODSON MINE PIPE #: 001 FLOW: M/R	SCG730613 MINOR INDUSTRIAL
HIGH HILL DRAINAGE CANAL JERRY HAYES EXCAVATION PIPE #: 001 FLOW: M/R	SCG730365 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Activities

SOLID WASTE LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
FLORENCE COUNTY LANDFILL MUNICIPAL	DWP-021 CLOSED
WELLMAN INC. LANDFILL INDUSTRIAL	IWP-092 INACTIVE

Mining Activities

MINING COMPANY ***MINE NAME***	***PERMIT #*** ***MINERAL***
CAROLINA SAND, INC. JOHNSONVILLE PLANT	0648-41 SAND
JERRY HAYES EXCAVATION J. HAYES	1202-41 SAND; SAND/CLAY
JERRY HAYES EXCAVATION HAYES EXCAVATION	1343-41 SAND; SAND/CLAY

Growth Potential

There is a low potential for growth in this watershed, which contains the Towns of Coward and Pamplico, and portions of the Towns of Scranton and Salem. Water and sewer service are available in Pamplico and Scranton, and water service is available in Coward. The watershed is bisected by U.S. Hwy. 52 and a rail line running north/south and by U.S. Hwy. 378 running east/west. U.S. Hwy. 52 is a major highway route from the City of Florence to the City of Charleston. Portions not already widened to four lanes are expected to be within 10-15 years, which could encourage industrial growth. The remainder of the watershed is rural with agricultural uses.

Watershed Restoration and Protection

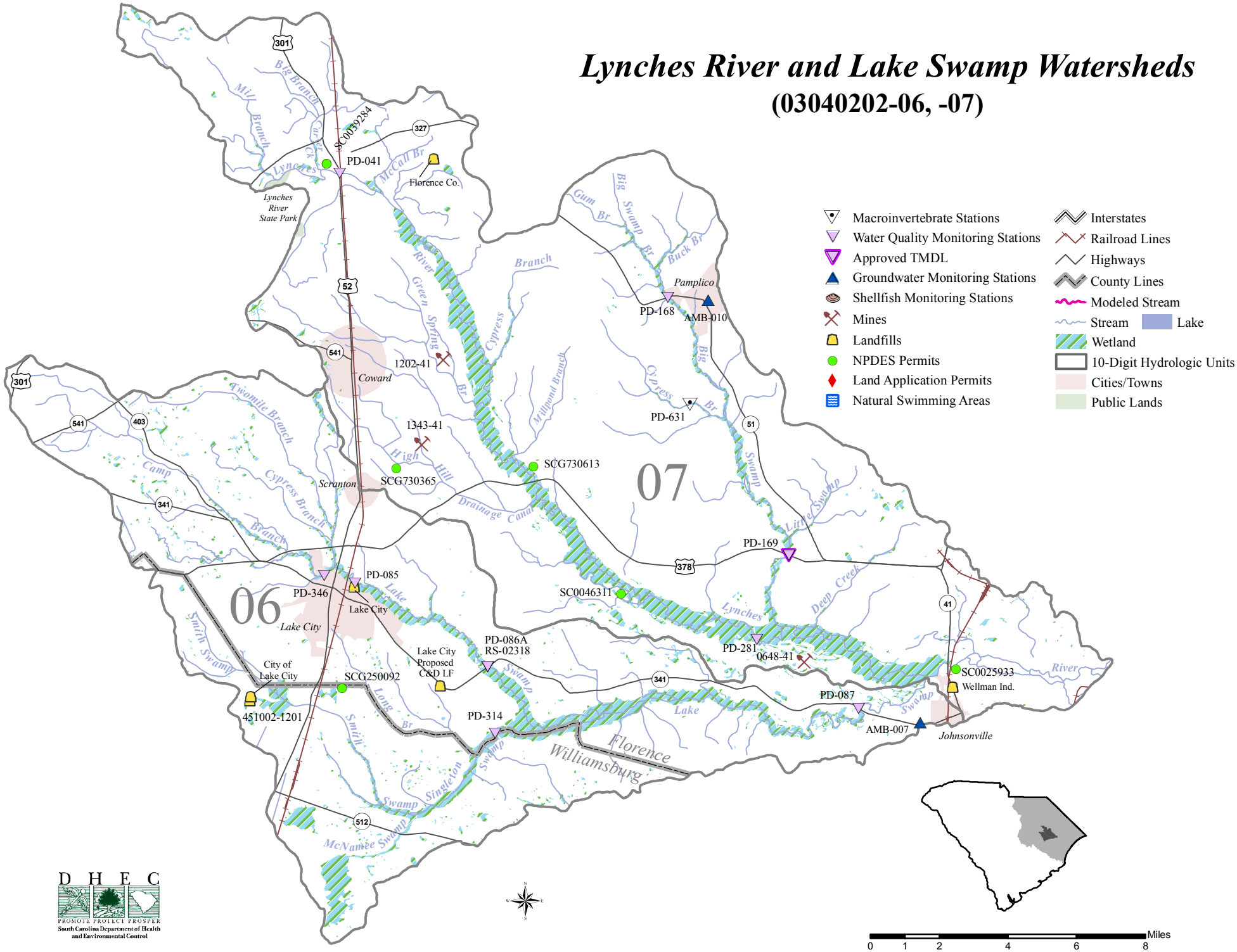
Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by the EPA for ***Big Swamp*** (monitoring site ***PD-169)*** to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The sources of fecal coliform were determined to be wildlife, grazing livestock, malfunctioning septic systems, and the Town of Pamplico Waste Water Treatment Plant (WWTP). The Town of Pamplico is in the process of upgrading the treatment system and transferring all discharge to the adjacent Pee Dee River; therefore the TMDL focuses predominantly on nonpoint sources of fecal coliform. To achieve compliance with water quality standards, the TMDL recommends fecal coliform loads be reduced by approximately 67.6% from livestock sources, 84.2% from the WWTP during the interim discharge period, and 100% from failing septic systems.

Special Projects

Fecal Coliform Bacteria TMDL Development and Implementation and Dissolved Oxygen Characterization for the Big Swamp and Singleton Swamp Watersheds

The Santee-Wateree Resource Conservation and Development Council (RC&D), along with the Williamsburg and Florence Soil and Water Conservation Districts, Williamsburg and Florence Natural Resource Conservation Services, and the Department of Natural Resources have developed and are implementing a fecal coliform bacteria TMDL for the Big Swamp and Singleton Swamp watersheds. The TMDL addresses fecal coliform excursions at SCDHEC water quality monitoring station PD-169. The RC&D and its cooperators used their local knowledge to assist a contractor with the development of a TMDL and the identification of potential pollution sources that negatively effect dissolved oxygen levels within the watershed. Following TMDL approval, project cooperators implemented a series of best management practices (BMPs) in cooperation with local homeowners. These BMPs were designed to reduce the loading of fecal coliform bacteria into the respective watersheds. Along with repairing failing septic tanks in the area, RC&D focused their attention on local 'Hobby Farms". These are places where a landowner may have several animals that are not utilized as income in a traditional farming or animal agriculture sense. RC&D identified cattle, horses, goats, donkeys, llamas, and even camels in the watershed. In cooperation with these landowners BMPs, including fencing, watering wells, heavy use protection areas, and filter strips were implemented to prevent these animals and their waste from accessing local streams. Through these BMPs and the upgrade of the Town of Pamplico wastewater treatment facility, SCDHEC hopes to begin seeing significant reductions of fecal coliform and increases in dissolved oxygen throughout the watersheds.


Lynches River and Lake Swamp Watersheds
(03040202-06, -07)
Macroinvertebrate Stations
Water Quality Monitoring Stations
Approved TMDL
Groundwater Monitoring Stations
Shellfish Monitoring Stations
Mines
Landfills
NPDES Permits
Land Application Permits
Natural Swimming Areas
Interstates
Railroad Lines
Highways
County Lines
Modeled Stream
Stream
Lake
Wetland
10-Digit Hydrologic Units
Cities/Towns
Public Lands
07
06
PD-041
SC0039284
Florence Co.
Lynches River State Park
PD-168
AMB-010
Pamplico
PD-631
1202-41
1343-41
SCG730613
SCG730365
Scranton
Coward
PD-085
PD-346
Lake City
SC0046311
PD-169
PD-281
0648-41
SC0025933
Wellman Ind.
Johnsonville
PD-086A
RS-02318
Lake City Proposed C&D LF
City of Lake City
SCG250092
451002-1201
PD-314
PD-087
AMB-007
Florence
Williamsburg
Twomile Branch
Cypress Branch
Camp Branch
Smith Swamp
Long Br
Singleton Swamp
McNamee Swamp
Millpond Branch
High Hill Drainage Canal
Gum Br
Big Swamp Br
Buck Br
Cypress Br
Big Cypress Swamp
Little Swamp
Deep Creek
Lynches River
Lake Swamp
Lake Swamp
Mill Branch
Big Branch
McCall Br
Green Spring Br
Lynches Cr
301
327
52
541
403
341
51
378
41
512
Miles
0
1
2
4
6
8
DHEC
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control